

1. An overlay control system comprising:
 - a plurality of process machines;
 - a data collection tool wherein said data collection tool measures overlay error from a run of a lot through
 - 5 a process machine;
 - an overlay tool servo wherein said overlay tool servo processes overlay error data, sends said overlay error data to an operator for use in manual overlay correction, and sends said overlay error data to a smart
 - 10 overlay control servo for use in automatic overlay correction;
 - said smart overlay control servo wherein said smart overlay control servo generates an overlay control table for each lot type; and
 - 15 an equipment servo wherein said equipment servo obtains previous layer correction and fine tuning values from said smart overlay control servo for a lot on a process machine, calculates an overlay correction using said previous layer correction and said fine tuning
 - 20 values, and sends said overlay correction to said process machine.

2. The system according to Claim 1 wherein said overlay correction for a lot's current layer on said process tool is equal to an overlay correction for said lot's

previous layer on said process tool plus fine tuning wherein said fine tuning is equal to a running average of previous lots' overlay errors.

3. The method according to Claim 1 wherein said overlay control table encompasses a given technology, a particular layer, and a particular process tool combination.

4. The system according to Claim 1 wherein said overlay control is used with a single alignment mark system.

5. The system according to Claim 2 wherein said overlay control is used with a multiple alignment mark system and wherein said overlay correction for said lot's previous layer on said process tool is set to zero.

6. A method of overlay control comprising:

 automatically generating an overlay control table for lots run through a process tool; and

 sending an overlay correction calculated from said overlay control table to said process tool in real-time.

7. The method according to Claim 6 wherein said overlay correction for a lot's current layer on said process

tool is equal to an overlay correction for said lot's previous layer on said process tool plus fine tuning wherein said fine tuning is equal to a running average of previous lots' overlay errors.

8. The method according to Claim 6 wherein said overlay control table encompasses a given technology, a particular layer, and a particular process tool combination.

9. The method according to Claim 6 wherein said overlay control is used with a single alignment mark system.

10. The method according to Claim 7 wherein said overlay control is used with a multiple alignment mark system and wherein said overlay correction for said lot's previous layer on said process tool is set to zero.

11. A method of overlay control comprising:

automatically generating an overlay control table for lots run through a process tool; and

5 sending an overlay correction calculated from said overlay control table to be used in a manual or real-time overlay correction process.

12. The method according to Claim 11 wherein said overlay correction for a lot's current layer on said process tool is equal to an overlay correction for said lot's previous layer on said process tool plus fine tuning wherein said fine tuning is equal to a running average of previous lots' overlay errors.

13. The method according to Claim 11 wherein said overlay control table encompasses a given technology, a particular layer, and a particular process tool combination.

14. The method according to Claim 11 wherein said overlay control is used with a single alignment mark system.

15. The method according to Claim 12 wherein said overlay control is used with a multiple alignment mark system and wherein said overlay correction for said lot's previous layer on said process tool is set to zero.

16. A method of overlay control comprising:
measuring overlay error after use of an exposure tool;

automatically generating an overlay control table
5 for lots run through said exposure tool using said
measured overlay error and a previous layer for each of
said lots; and

sending an overlay correction calculated from said
overlay control table to be used in a manual or real-
10 time overlay correction process.

17. The method according to Claim 16 wherein said
overlay correction for a lot's current layer on said
exposure tool is equal to an overlay correction for said
lot's previous layer on said exposure tool plus fine
tuning wherein said fine tuning is equal to a running
average of previous lots' said overlay errors.

18. The method according to Claim 16 wherein said
overlay control table encompasses a given technology, a
particular layer, and a particular exposure tool
combination.

19. The method according to Claim 16 wherein said
overlay control is used with a single alignment mark
system.

20. The method according to Claim 17 wherein said overlay control is used with a multiple alignment mark system and wherein said overlay correction for said lot's previous layer on said exposure tool is set to zero.